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MINTZ, LEVIN, COHN, FERRIS, GLOVSKY & POPEO, P.C.
ONE FINANCIAL CENTER
BOSTON, MA 02111

EXAMINER	
MORRISON, JAY A	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/717,186	KOERNER ET AL.	
	Examiner	Art Unit	
	JAY A. MORRISON	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5-11 and 13-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2, 5-11 and 13-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. Claims 1-2, 5-11 and 13-21 are pending.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the term "computer readable storage media", as in claims 1-2, 5-8 and 14-21, is not found in the specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-2, 5-11 and 13-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carothers et al. ('Carothers' hereinafter) (Publication Number 2002/0016771) in view of Benson (Publication Number 2004/0225675).

As per claim 1, Carothers teaches

A database system embodied in computer- readable media, the database system comprising: (see abstract and background)

a database, wherein the database is a multidimensional database; (data warehousing and olap technologies, paragraph [0049], lines 10-12)

a plurality of application tools, each of the tools being configured to access data objects from the database, the tools comprising: (system for identifying trends, behavior, and planning using olap database, paragraph [0049], lines 4-10)

a business reporting tool which performs online analytical processing business reporting operations based on one or more data objects, (MIS facility to generate reports from database using olap technologies, paragraph [0049], 2-4 and 8-12)

the business reporting tool configured to view the one or more data objects and to not make changes to the one or more data objects, (MIS facility to generate reports, paragraph [0049], 2-4)

the business planning tool configured to view the one or more data objects and to change the one or more data objects; (interactive version, paragraph [0064], lines 1-5; figure 7)

and a business planning tool, integrated with the reporting tool, which performs online analytical processing business planning operations (capacity planning using data from database and olap technologies, paragraph [0049], lines 4-6 and 8-12)

by the business planning tool to the data objects accessed from the database (utilize data warehouse, paragraph [0049], lines 8-10)

the business reporting tool and the business planning tool requesting data (utilize data warehouse, paragraph [0049], lines 8-10)

providing an integrated view to the business reporting, tool and the business planning tool. (MIS facility which provides planning and reporting, paragraph [0049], lines 1-6)

Carothers does not explicitly indicate "accessed from a data buffer", "based on the one or more data objects accessed from the data buffer", nor "the data buffer configured to store a copy of the one or more data objects accessed from the database; and a delta buffer configured to store a delta record, wherein the delta record characterizes a difference between the one or more data objects and a modified version of the one or more data objects, the modified version being a result of a change made" "the data objects buffered in the data buffer having a logical key, a description of an aggregation level, and a description of a selection condition" "from the data buffer having a specified aggregation level and a specified selection condition, the delta buffer and the data buffer".

However, Benson discloses "accessed from a data buffer" (paragraph [0036], lines 8-12), "based on the one or more data objects accessed from the data buffer" (paragraph [0038], lines 1-6), and "the data buffer configured to store a copy of the one or more data objects accessed from the database; and a delta buffer configured to store a delta record, wherein the delta record characterizes a difference between the one or more data objects and a modified version of the one or more data objects, the modified version being a result of a change made" (record deltas for individual records, paragraph [0040], lines 4-8) "the data objects buffered in the data buffer having a logical key, a description of an aggregation level, and a description of a selection condition" "from the data buffer having a specified aggregation level and a specified selection condition, the delta buffer and the data buffer" (record deltas contain all the operational and value information, paragraph [0045], lines 1-3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "accessed from a data buffer", "based on the one or more data objects accessed from the data buffer", and "the data buffer configured to store a copy of the one or more data objects accessed from the database; and a delta buffer configured to store a delta record, wherein the delta record characterizes a difference between the one or more data objects and a modified version of the one or more data objects, the modified version being a result of a change made" "the data objects buffered in the data buffer having a logical key, a description of an aggregation level, and a description of a selection condition" "from the data buffer having a specified aggregation level and a specified selection condition, the delta buffer and the data buffer" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 2,

Carothers does not explicitly indicate "the delta buffer is configured to generate a cumulative delta record".

However, Benson discloses "the delta buffer is configured to generate a cumulative delta record" (paragraph [0040], lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "the

delta buffer is configured to generate a cumulative delta record" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 5,

Carothers does not explicitly indicate "the delta buffer includes at least one delta record and each delta record has a corresponding request identifier, and wherein the request identifier is usable by a data object to represent the one or more delta records that have been used to update a data object".

However, Benson discloses "the delta buffer includes at least one delta record and each delta record has a corresponding request identifier, and wherein the request identifier is usable by a data object to represent the one or more delta records that have been used to update a data object" (paragraph [0050], lines 3-8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "the delta buffer includes at least one delta record and each delta record has a corresponding request identifier, and wherein the request identifier is usable by a data object to represent the one or more delta records that have been used to update a data object" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their

change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 6,

Carothers does not explicitly indicate "the delta buffer includes at least one delta record and the database system is configured to store the at least one delta record with data in the database".

However, Benson discloses "the delta buffer includes at least one delta record and the database system is configured to store the at least one delta record with data in the database" (paragraph [0040], lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "the delta buffer includes at least one delta record and the database system is configured to store the at least one delta record with data in the database" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 7,

Carothers does not explicitly indicate "the data buffer and the delta buffer are parts of a system memory of a computer system".

However, Benson discloses "the data buffer and the delta buffer are parts of a system memory of a computer system" (paragraph [0036], lines 7-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "the data buffer and the delta buffer are parts of a system memory of a computer system" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 8,

Carothers does not explicitly indicate "the delta buffer is configured to compress two or more delta records to generate a cumulative delta record".

However, Benson discloses "the delta buffer is configured to compress two or more delta records to generate a cumulative delta record" (paragraph [0070], lines 3-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "the delta buffer is configured to compress two or more delta records to generate a cumulative delta record" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 9,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 1 and is similarly rejected.

As per claim 10,

Carothers does not explicitly indicate "compressing the delta buffer, wherein compressing the delta buffer includes generating a cumulative delta record".

However, Benson discloses "compressing the delta buffer, wherein compressing the delta buffer includes generating a cumulative delta record" (paragraph [0073], lines 2-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "compressing the delta buffer, wherein compressing the delta buffer includes generating a cumulative delta record" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 11,

Carothers does not explicitly indicate "storing the delta buffer in the database, wherein storing the delta buffer in the database includes integrating the one or more delta records in the delta buffer with the corresponding data in the database".

However, Benson discloses "storing the delta buffer in the database, wherein storing the delta buffer in the database includes integrating the one or more delta records in the delta buffer with the corresponding data in the database" (paragraph [0057], lines 5-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "storing the delta buffer in the database, wherein storing the delta buffer in the database includes integrating the one or more delta records in the delta buffer with the corresponding data in the database" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 13,

Carothers does not explicitly indicate "associating the delta record with a request identifier, wherein the request identifier is usable by a data object to represent the one or more delta records that have been used to update a data object".

However, Benson discloses "associating the delta record with a request identifier, wherein the request identifier is usable by a data object to represent the one or more

delta records that have been used to update a data object" (paragraph [0050], lines 3-8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "associating the delta record with a request identifier, wherein the request identifier is usable by a data object to represent the one or more delta records that have been used to update a data object" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 14,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 1 and is similarly rejected.

As per claim 15,

Carothers does not explicitly indicate "a server program configured to manage the data buffer".

However, Benson discloses "a server program configured to manage the data buffer" (paragraph [0036], lines 7-11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "a

server program configured to manage the data buffer" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 16,

Carothers does not explicitly indicate "a server program configured to manage the delta buffer".

However, Benson discloses "a server program configured to manage the delta buffer" (paragraph [0040], lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "a server program configured to manage the delta buffer" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 17, Carothers teaches

the reporting tool and/or planning tool (paragraph [0049], lines 10-12)

Carothers does not explicitly indicate "generates the delta record".

However, Benson discloses "generates the delta record" (paragraph [0040], lines 1-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "generates the delta record" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 18,

Carothers does not explicitly indicate "the delta buffer stores at least one delta record and each delta record corresponds to a request identifier, wherein the request identifier represents at least one delta record that has been used to update a data object".

However, Benson discloses "the delta buffer stores at least one delta record and each delta record corresponds to a request identifier, wherein the request identifier represents at least one delta record that has been used to update a data object" (paragraph [0050], lines 9-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "the delta buffer stores at least one delta record and each delta record corresponds to a request identifier, wherein the request identifier represents at least one delta record that has been used to update a data object" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a

database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 19,

Carothers does not explicitly indicate "the delta buffer is configured to compress two or more delta records to generate a cumulative delta record".

However, Benson discloses "the delta buffer is configured to compress two or more delta records to generate a cumulative delta record" (paragraph [0070], lines 3-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "the delta buffer is configured to compress two or more delta records to generate a cumulative delta record" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 20,

Carothers does not explicitly indicate "the delta buffer includes at least one delta record and the database system is configured to store the at least one delta record in the database, wherein storing the at least one delta record includes integrating the at least one delta record with data in the database".

However, Benson discloses "the delta buffer includes at least one delta record and the database system is configured to store the at least one delta record in the database, wherein storing the at least one delta record includes integrating the at least one delta record with data in the database" (paragraph [0056], lines 6-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Carothers and Benson because using the steps of "the delta buffer includes at least one delta record and the database system is configured to store the at least one delta record in the database, wherein storing the at least one delta record includes integrating the at least one delta record with data in the database" would have given those skilled in the art the tools to improve the invention by reducing transfer time between memory and a database by keeping records and their change information in memory. This gives the user the advantage of more efficient use of resources.

As per claim 21,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 1 and is similarly rejected.

Response to Arguments

5. With respect to Applicant's arguments regarding the object to the specification for failing to provide antecedent basis for the term "computer-readable media", filed 11/19/2008, these arguments have been fully considered but they are not persuasive. Applicant argues that the specification does in fact provide the necessary disclosure as "a data buffer, a system memory, a database system, a database" described in paragraph [0006]. It is respectfully submitted that nowhere in these disclosures, nor anywhere else in the specification, is the term "computer-readable storage media" found. It is not clear from the Applicant's arguments how the claimed term is disclosed by the different terms which are disclosed in the specification. It is suggested that the Applicant amendment the claims to recite terms that are disclosed in the specification.

6. Applicant's arguments regarding the 35 USC 103 rejections in view of the Carothers and Benson references, filed 11/19/2008, have been fully considered but they are not persuasive.

7. Applicant argues that Carothers does not disclose "a business reporting tool which performs online analytical processing business reporting operations based on one or more data objects accessed from a data buffer, the business reporting tool configured to view the one or more data objects and to not make changes to the one or more data object". Respectfully, it is noted that Carothers is not directed to the objects accessed from the data buffer portions of the claim as argued by the applicant; these

limitations are taught by the Benson reference. However, Carothers does disclose the business reporting tool viewing the data objects as an MIS facility to generate reports (paragraph [0049], lines 2-4). Applicant argues that this is simply a home banking system with limited reporting capabilities. Respectfully, Carothers teaches the MIS report generation tool being used by business decision makers and analysts (paragraph [0049], lines 1-4). Therefore, respectfully, Carothers discloses the reporting tool portions of the limitation, and when combined with the data buffer teaching of Benson the entire limitation is in fact taught.

8. Applicant argues that Carothers does not disclose "a business planning tool, integrated with the reporting tool, which performs online analytical processing business planning operations based on the one or more data objects accessed from the data buffer, the business planning tool configured to view the one or more data objects and to change the one or more data objects". Respectfully, it is noted that Carothers is not directed to the objects accessed from the data buffer portions of the claim as argued by the applicant; these limitations are taught by the Benson reference. However, Carothers does disclose the business planning tool integrated with the reporting tool that performs online analytical processing business planning as capacity planning using data from the database and olap technologies in the same system as the planning tools (paragraph [0049], lines 8-10). Therefore Carothers discloses the limitation, and when combined with the data buffer teaching of Benson the entire limitation is in fact taught.

9. Applicant argues that Benson dones not disclose "data buffer" nor "the data objects buffered in the data buffer having a logical key, a description of an aggregation level, and a description of a selection condition, the business reporting tool and the business planning tool requesting data from the data buffer having a specified aggregation level and a specified selection condition". Applicant further argues that Benson teaches the business and planning tools, however these limitations are taught by Carothers as noted in the rejections and in answer to Applicant's arguments above, and Benson is directed to the data buffer elements of the claim. Respectfully, it is noted that Benson discloses data buffers and accessing objects in the data buffers (paragraph [0036], lines 1-12). In addition, regarding the argument that Benson does not teach the logical key, description of an aggregation level, and a description of the selection condition, these limitations are not described in the claim and are therefore non-functional and the operational and value information of Benson (paragraph [0045], lines 1-3) does in fact teach these limitations. It is suggested that if the Applicant wishes these non-functional values to be given specific functional meanings that these functional meanings be included in the claims. Therefore, respectfully, Benson discloses the limitations.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tim T. Vo/
Supervisory Patent Examiner, Art Unit 2168

Jay Morrison
TC2100

Tim Vo
TC2100